

# Department of Land and Natural Resources

## Sustainability Hotspot

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### KANEOHE BAY

~Island of Oahu~



Top to bottom: The majestic Koolaus provide a backdrop for Kaneohe Bay, Kaneohe Yacht Club and its dock, Hakipuu at Kaneohe.

Set against the dramatic majesty of the Koolau mountain range, Kaneohe Bay has been a rich resource for those who harvest the sea as well as those seeking calm waters for ocean recreation. Over time, due largely to the stress on this resource by the presence of man, the bay is a shadow of the fertile estuary it once was.

The Kaneohe Bay Task Force was created by the Hawaii State Legislature in 1990 to develop a plan for the sustained use and enjoyment of this resource. After many public meetings, much community effort, contention, negotiation and compromise, the Task Force produced the Kaneohe Bay Master Plan.

The Master Plan identifies resources at risk in this area, including: aquatic life in the bay, the Koolaupoko District watersheds of the twelve streams entering the bay, and wetland habitats; water quality; and open space on the bay's inner and outer waters. The risks thereby impact resources such as the ecological diversity; sustainable recreational, subsistence and commercial uses; aesthetic value; as well as human health and safety.

The Master Plan also identifies parties affected by resources at risk, including:

- residents in the Kaneohe Bay watershed;
- recreational users of Kaneohe Bay, including residents from all over Oahu, and visitors (e.g., boaters, fishermen, windsurfers, paddlers, divers, beachcombers);
- commercial users of Kaneohe Bay (e.g., tour operators, fishermen, renters and vendors of recreational equipment--windsurf boards, kayaks, fishing tackle, SCUBA and snorkeling gear--and instructors--windsurfing and SCUBA) and their customers;
- research scientists (many associated with HIMB, the Hawaii Institute of Marine Biology).

The Master Plan recognizes many barriers to sustaining the resources of Kaneohe Bay, including:

- runoff and pollution from urban development;
- limited (public) access to the bay shore;
- deteriorating water and ecological quality in the bay;

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Top to bottom: Kaneohe Bay is a shadow of the fertile estuary it once was, past research done in Kaneohe Bay included surveys on Eucheuma, remains of a pond wall in the bay waters.

- commercial recreation activities;
- overfishing;
- safety and public recreation conflicts;
- inadequacy of existing mooring areas.

#### **DLNR'S Sustainability Hotspot Team, comprised of:**

**Dave Eckert - Aquatic Resources, Oahu, 587-0113;**

Sara Collins - Historic Preservation;

Bobby Fernandez - Conservation and Resources Enforcement;

William Gorst - State Parks;

David Higa - Water Commission;

Mike Lapilio - Conservation and Resources Enforcement;

Steve Lau- Land Division;

Dave Smith - Forestry and Wildlife;

Fagota Tataipu, Jr. - Conservation and Resources Enforcement;

Steve Thompson - Boating and Ocean Recreation;

Leonard Young - Aquaculture Development Program;

actively represents the department in efforts to protect the future of this resource.

#### **DLNR's Vision for the Future and How to Attain It**

In partnership with the community and the Legislature, our goal for this sustainability hotspot is the implementation of the Kaneohe Bay Master Plan. As stipulated in the Master Plan, DLNR has acted to:

- preserve and protect natural resources of Kaneohe Bay for the continued use and enjoyment of the general public and future generations;
- resolve conflict among various users of the bay including the general public, anglers, and commercial ocean recreation operations;
- assess the environmental and ecological impacts of activities on the bay and in the watershed.

These efforts are evident in DLNR's past accomplishments. The department's Aquatics Division either did or funded research to learn:

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Top: Puu Kaneohealani at Kualoa. Photo 2-4: A survey station up close and in the water from past research on marine inhabitants of Kaneohe Bay.

- how many people fish in Kaneohe Bay, how much and where they are catching fish;

- how many fish are in Kaneohe Bay (by methods such as SCUBA surveys and echo-sounding for schools of fish like *akule* [big-eyed scad] and *opelu* [mackerel]);

- how much game-fish and food-fish move about in the bay, how fast they grow and what happens to them if caught and released;

- how much sediment is going into the bay (1993) compared to previous years (1950 & 1979), and what the sediment is doing to corals in the bay;

- the amount of nutrients going into the bay (e.g., nitrates and phosphates) and what these nutrients do to bottom-dwelling organisms like corals and *limu* (seaweed) species;

As a result of these research accomplishments, DLNR has changed regulations for gill-netting to help conserve fish resources.

DLNR has also held public workshops to explain research results and continues to conduct educational and informational activities focusing on Kaneohe Bay. This includes presentations to schools and community groups, site visits to the Hawaii Institute of Marine Biology on Coconut Island, and an interactive TV program on coral reef resources seen in classrooms all over the country. DLNR's Conservation and Resources Enforcement division has even conducted well-publicized "sweeps" in Kaneohe Bay to discourage fishing violations and encourage compliance with management regulations.

Today, DLNR is working to accomplish other goals of the Kaneohe Bay Master Plan. In spite of limited funding and manpower, DLNR's Aquatics Division is:

- seeking the best way to establish saltwater sportfishing in Hawaii, to get better information on the effects of recreational fishing in Kaneohe Bay and Statewide;

- engaged in transforming fishing laws into fishing rules, giving the department greater flexibility to change regulations as needed to better protect the resources;



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Top to bottom: Turtles and other marine life in the estuary will benefit from new administrative rules proposed for thrillcraft and other boating activities, continued research on human impact and improved enforcement of existing rules will help sustain Kaneohe Bay as a future resource for State residents and visitors.

- strengthening certain fishing regulations to make them more effective and to impose greater penalties for violators.

On-going research conducted or sponsored by DLNR will explore:

- how important particular “nursery grounds” are, by telling where *keiki* (juvenile) fish grow to maturity by measuring proportions of different lead isotopes in their ear bones;
- how much heavy-metal pollution comes into Kaneohe Bay from non-point sources (e.g., from yards and streets), if these materials cause coral bleaching or tumors on *honu* (Green Sea Turtles) in the bay;
- if the amount of nutrients (fertilizer) coming into Kaneohe Bay is due more to heavy stream flow after storms, or to levels of relatively steady stream flows in between.

The Boating and Ocean Recreation division is bringing to public review a package of proposed “administrative rules” (State regulations) to manage commercial boating activities, reduce user conflicts among boaters, and sustain the resources of Kaneohe Bay. The division aims to adopt boating rules for Kaneohe Bay by mid-1998.

DLNR’s Conservation and Resources Enforcement division is working with the Kaneohe Bay Regional Council on a volunteer program and plans to conduct more sweeps in the bay as funds and manpower permit.

Some of the future steps DLNR would like to take to improve conditions at Kaneohe Bay include:

- establishment of a new fishpond subzone of the Conservation District and community-based projects to restore and operate fishponds;
- improvements to bay facilities to enhance educational programs;
- establishment of a prototype streambelt along Waihee, Haiamoa, Waihole, or Hakipuu Stream;
- research to determine human impact on heavily-fished species so DLNR can refine regulations for closed seasons;

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Top: Fishing boat in Kaneohe Bay. Middle: Thrillcraft operators. Bottom: Hotspot Team member Dave Smith of Forestry and Wildlife.

- assignment of one or more enforcement officers to work always along windward Oahu, primarily in Kaneohe Bay, with neighborhood/community organizations, volunteers and the aquatic resources education unit;
- development of a local volunteer program--windward residents patrolling Kaneohe Bay;
- improvement of wetlands for habitat protection and conservation educational efforts.

For further details about improving the long-term sustainability of Kaneohe Bay, please refer to the Kaneohe Bay Master Plan.

**To implement DLNR's future vision for this sustainability hotspot, a budget of \$2.94 million for startup costs and an annual operating budget of \$96,000 in successive years would be required.** 🌺



DLNR's Hotspot Team for Kaneohe Bay (l-r): Lapilio, Young, Lau, Collins, Higa, Thompson, Tataipu, Gorst, Eckert, Fernandez.